



US005594470A

United States Patent [19]**Meyerson et al.**[11] **Patent Number:** **5,594,470**[45] **Date of Patent:** **Jan. 14, 1997**[54] **HIGHLY INTEGRATED PORTABLE
ELECTRONIC WORK SLATE UNIT**[75] Inventors: **Robert F. Meyerson**, Captiva Island,
Fla.; **Yung-Fu Chang**, Medina, Ohio[73] Assignee: **Teletransaction, Inc.**, Akron, Ohio[21] Appl. No.: **268,806**[22] Filed: **Jun. 30, 1994****Related U.S. Application Data**

[63] Continuation of Ser. No. 956,112, Oct. 2, 1992, abandoned.

[51] **Int. Cl.⁶** **G09G 5/00**[52] **U.S. Cl.** **345/169; 345/173; D14/100**[58] **Field of Search** 340/825.26, 825.27-825.29;
248/917, 918, 919; 341/22, 23, 32, 33;
455/347-351; D14/100, 106, 113, 115;
367/708, 709.1; 379/440, 428; 368/10,
13, 203, 204; 345/173-183, 169; 178/18-20;
364/900; 235/169[56] **References Cited****U.S. PATENT DOCUMENTS**

D. 297,939 10/1988 Bradbury et al. D14/100 X
 D. 309,295 7/1990 de la Huerga et al. D14/100
 345,147 3/1994 Fukutake et al. .
 348,654 7/1994 Brack et al. .
 356,299 3/1995 Hamilton et al. .
 4,237,540 12/1980 Sato 345/169 X
 4,279,021 7/1981 See et al. 364/900
 4,412,751 11/1983 Jeannet et al. .

4,458,238 7/1984 Learn 345/169 X
 4,847,818 7/1989 Olsen .
 4,885,580 12/1989 Noto et al. .
 4,916,441 4/1990 Gombrich .
 5,031,119 7/1991 Dulaney et al. .
 5,059,778 10/1991 Zouzoulas et al. .
 5,123,064 6/1992 Hacker et al. .
 5,349,497 9/1994 Hanson et al. .
 5,350,909 9/1994 Powell et al. 235/472
 5,410,141 4/1995 Koenck et al. 235/472

FOREIGN PATENT DOCUMENTS

91/04461 4/1991 WIPO .

Primary Examiner—Ulysses Weldon*Attorney, Agent, or Firm*—Watts, Hoffmann, Fisher & Hei-
nke Co., L.P.A.

[57]

ABSTRACT

A portable electronic work slate unit includes a customizable array of data devices and input/output devices which are selectively integrated in a compact and highly ergonomic structure. Increased operator productivity is accomplished by use of several possible user interface media including a multi-function display and input/output unit including a digitizer, position sensitive screen, and video display panel. Selectively integratable user interface components include a bar code scanner, RF modulator for radio frequency communication, modem, audio input/output, as well as the multi-purpose display. All components are integrated by use of a handle unit which can house a battery as well as removable modules in a manner so as to minimize operator fatigue and discomfort, as well as enhance productivity.

26 Claims, 6 Drawing Sheets